

## Chapter 4: Additional Project Information

This chapter reviews the following topics:

- Indirect impacts
- Cumulative impacts
- Public and agency involvement
- Anticipated permits and clearances needed for project construction
- Short-term uses versus long-term productivity
- Irreversible and irretrievable commitments of resources

### 4.1 Indirect Impacts

The cities within and surrounding the VC project are some of the fastest-growing in the state. Some agricultural and vacant land is planned to be converted to residential and commercial developments. The existing land uses include agricultural, open land, residential, commercial, and industrial. The area also includes the former Geneva Steel plant site, which is being planned for redevelopment. Numerous new commercial developments are currently being planned around the I-15 Pleasant Grove interchange, along 500 East south of I-15, and on land adjacent to I-15. These developments were planned prior to the initiation of the VC project and were being designed to fit within the existing road network.

The project team contacted representatives of the jurisdictions in the project evaluation area about their expectations for current and future land uses and future growth trends. Long-range population and employment projections produced by MAG (2007, 2008) support the local jurisdictions' belief that land use along the I-15 corridor between American Fork and Orem will continue to change from agricultural to urban whether or not the VC project is constructed. The cities of American Fork, Lindon, and Orem did not state that the VC project was needed to support development in their communities (HDR 2007a, 2008a, 2008b, 2008d). In fact, the cities of American Fork and Lindon felt that the VC project would reduce the amount of development proposed for the area because it would bisect parts of the cities planned for new development, thus limiting the size of developable properties (HDR 2008a, 2008b).

The Town of Vineyard is the only jurisdiction that identified a direct relationship between expected growth and the Vineyard Connector. However, this growth is planned and is shown on Vineyard's General Plan, which shows a planned development on the Geneva Steel plant site (J-U-B 2007). According to Vineyard

representatives, the planned development would be compatible with the expected configuration of the VC (HDR 2007b). One of the purposes of the project is to support redevelopment of the former plant site, and the development that would happen at this site as a result of the VC project would occur as infill on a formerly unusable site. Reuse of the site would likely reduce the amount of development on adjacent agricultural and open land.

The other cities' transportation master plans include local streets and connections to other planned regional arterials to support the future growth. UDOT does not expect that the VC project would cause indirect growth in Lehi, American Fork, Lindon, or Orem because the cities' road networks have been designed to accommodate the planned growth whether or not the VC is constructed.

Finally, many of the large tracts in the northern part of the project evaluation area are classified as APAs that are not likely to be converted to other uses because of the landowners' desire to continue using the properties for agriculture (The Christensen Brothers 2008; HDR 2008c). UDOT does not expect the VC to cause indirect growth in these APAs.

In summary, UDOT does not expect the VC project to induce growth. The VC could help preserve current agricultural and open land by focusing development at the former Geneva Steel plant site and along the developing area west of I-15.

## 4.2 Cumulative Impacts

Even though the VC project is state-funded, the project was evaluated for cumulative impacts using guidance from the federal Council on Environmental Quality (CEQ), *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997). The CEQ regulations (40 CFR 1500–1508) define cumulative impacts as:

The impact on the environment which results from the incremental impact of the [proposed] action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal, or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

Cumulative impacts include both direct and indirect impacts.

This section explains how other actions that were considered along with the VC project were identified and presents the potential cumulative impacts on resources in the project region.

### 4.2.1 Other Actions

The project team took several steps to determine potential other actions to consider in the cumulative analysis. The first step involved coordination between UDOT, UTA, and MAG to help identify other transit and roadway projects that could result in cumulative impacts when combined with the VC project. This step included reviewing the RTP and various environmental documents that were recently completed or are in progress. In addition, UDOT held multiple meetings internally with project managers to identify current and upcoming projects and the scope of the potential impacts. The intent of these meetings was to address region-wide issues related to cumulative impacts. Finally, municipalities in the project evaluation area were contacted to help identify major local projects including private developments.

The cumulative impacts analysis considers other actions in northern Utah County that were described in the cumulative impacts discussions in the Mountain View Corridor Final EIS (FHWA 2008a) and the I-15 Corridor Utah County to Salt Lake County Final EIS (FHWA 2008b). These discussions include all funded projects listed in the Statewide Transportation Improvement Program. Other non-transportation projects include planned residential subdivisions and commercial developments described by the cities and local developers. The following actions were considered in the cumulative impacts analysis:

- I-15 Corridor Utah County improvements
- Geneva Road improvements (Orem and Vineyard)
- SR 92 improvements (Lehi)
- Construction of the Pioneer Crossing (Lehi and Saratoga Springs)
- Redwood Road improvements in Utah County
- Mountain View Corridor improvements in Utah County
- Construction of the Provo to Salt Lake FrontRunner (commuter-rail) line
- Regional bus service improvements
- Planned new residential subdivisions and commercial developments in Eagle Mountain, Saratoga Springs, Lehi, Lindon, Orem, Vineyard, and American Fork

### 4.2.2 Important Cumulative Impact Issues Associated with the Vineyard Connector Project

The VC project could affect resources in combination with other projects. Resources can be elements of the physical environment, species, habitats, ecosystem parameters and functions, cultural resources, recreation opportunities, the structure of human communities, traffic patterns, or other economic and

social conditions. However, according to CEQ's cumulative impacts guidance, the cumulative impact analysis should be narrowed to focus on important issues at a national, regional, or local level. The analysis should look at other actions that could have similar effects and whether a particular resource has been historically affected by cumulative actions. As part of public scoping for the VC project and other UDOT projects such as the Mountain View Corridor, the public identified the following main concerns regarding cumulative impacts:

- Loss of farmlands
- Loss of wetlands, wildlife areas, and water bodies
- Continued degradation of air and water quality

Meetings were held with local municipalities in the project evaluation area. The main issues identified by community officials included preserving wetland and wildlife areas and concern about the degradation of water quality. The resource agencies identified the following initial issues:

- Loss of wetlands and wildlife habitat along the Utah Lake floodplain
- Loss of wetlands and wildlife habitat along the Jordan River
- Indirect impacts to regional air and water quality
- Degradation of water quality, increase in stormwater flow, and loss of stream ecology

Based on the scoping process and the expected direct impacts from the VC project, the project team identified the following important cumulative impacts issues, which are the focus of the cumulative impacts analysis:

- Farmland
- Air quality
- Water quality
- Wetlands
- Wildlife and threatened and endangered species

#### **4.2.2.1 Farmland**

The potential cumulative impacts on the resources under study depend on future changes in land use. For the farmland cumulative impact analysis, the geographic scope is Utah County. This area was selected based on the availability of data and because it is the likely area of development surrounding the VC project.

Although data on the amount of farmland between 1900 and the 1960s were not available for Utah County, vast areas were farmed during this period to support the local population. In 1966, in the Upper Jordan River Study Area (which includes Utah County and portions of the surrounding counties), there were about 172,700 acres of irrigated cropland. By 1995, the amount of irrigated cropland

increased to 174,300 acres. However, the Utah Division of Water Resources' Land Survey (2003) found that the total amount of land available for agriculture in Utah County declined from 211,259 acres in 1995 to 168,376 acres in 2002.

No data are available on the exact amount of agricultural land that would be converted to urban uses in the future. However, regional development in Utah County along with other projects could result in a greater-than-50% loss of agricultural land. The VC project would result in a direct loss of a maximum of 52 acres of agricultural/pasture land, or less than 1% of the total agricultural land currently in Utah County.

#### **4.2.2.2 Air Quality**

This section provides an overview of the cumulative impacts to air quality from the VC project and other actions in the area. The geographic scope of this analysis is Utah County.

By itself, the VC project would not cause any federal or state air quality standards to be exceeded. In addition, regional modeling conducted by MAG for the 2030 transportation conformity analyses demonstrated that all regionally significant transportation projects (including the VC) would be in compliance with the NAAQS (MAG 2007). Population growth in the air quality impact analysis area has had little effect on overall air quality as demonstrated by the continuing improvement in air quality throughout the region.

Overall, the growth in the area by 2030 would likely be the same with or without the VC project. However, the project would help reduce regional traffic congestion and improve travel times, which could help maintain compliance with air quality standards. Improved travel times throughout the region would reduce idling emissions of CO and volatile organic compounds.

#### **4.2.2.3 Water Quality**

This section provides an overview of the cumulative impacts to water quality from the VC project and other actions in the area. The geographic scope of this cumulative analysis is the Utah Lake–Jordan River Watershed Management Unit, which is in north-central Utah and includes those streams that drain into Utah Lake as well as the Jordan River and its tributaries.

The VC project would increase the amount of impervious (paved) surface by about 122 acres, which would increase the potential for stormwater pollution. However, the analysis conducted for the VC project showed that the increase in the amount of impervious surface would not affect the beneficial uses of water resources or result in further adverse effects to impaired water bodies in the area. In addition, the VC project would include measures to control stormwater runoff

and would use detention basins to minimize the amounts of pollutants that are discharged into nearby surface waters. UDOT does not expect other transportation projects in the region to contribute to major stormwater runoff or reduce water quality because of the controls that would be placed on each project to manage runoff and minimize water quality impacts.

In addition, many of these projects (such as SR 92) are improving existing roads that have no stormwater controls by adding control measures that could reduce water quality impacts. It is likely that one of the greatest contributors to future water quality impacts will be the urban development that is converting existing undeveloped land into residential, industrial, and commercial uses. However, this increase in urbanization would also decrease the amount of agriculture and resource extraction, which are two of the larger factors that impair water quality. It is also likely that, in the future, regulatory controls would be increased to reduce water quality impacts.

#### **4.2.2.4 Wetlands**

This section provides an overview of the cumulative impacts to wetlands from the VC project and other actions in the area. The geographic scope of this analysis is Utah Valley. The timeframe of the cumulative impact analysis is from about the mid-1800s (pre-European settlement) through 2030. The change from historic to current wetlands and habitat availability was estimated using regional-scale land cover data (Jones & Stokes 2005). The baseline year selected for the analysis (2003) was based on 2003 land cover data.

Wetlands in the Utah Lake hydrologic unit have been extensively altered as a result of urban and agricultural development during the past century. The wetlands adjacent to Utah Lake have been extensively altered or lost, and many of the streams that flowed into Utah Lake and the Jordan River have been altered for water supply, control of stormwater, agricultural uses, and urban development. Based on National Wetland Inventory data, Utah County has about 11,018 acres remaining out of the historic estimate of 66,200 acres of wetlands (Jones & Stokes 2005).

Other reasonably foreseeable transit and roadway projects in Utah County for which data are available could result in direct impacts to between 50 acres and 95 acres of wetlands. However, project proponents would be required to mitigate these impacts in the same watershed. Overall, based on the projected estimates of population growth and population densities, there would continue to be a trend of converting wetlands to increasingly dense levels of development.

The VC project would remove less than 2 acres of wetlands. Although other planned transportation projects would result in impacts to wetlands, urban growth, regardless of the construction of roads and rails, will likely cause the

greatest impact to wetlands between 2002 and 2030. However, all projects that would require a Clean Water Act Section 404 individual permit are required to identify the least environmentally damaging practicable alternative, which is the goal of the wetland assessment component of this project. In addition, all projects that result in impacts to wetlands are required to provide information about the functions and values of affected wetlands as part of a Section 404 permit application; this information is used when evaluating impacts and designing mitigation for effects that cannot be avoided or minimized.

Mitigation typically involves creating, restoring, and/or enhancing wetlands. USACE generally requires that mitigation for all direct impacts be completed within the general project vicinity and/or in the same watershed.

#### **4.2.2.5 Wildlife and Threatened and Endangered Species**

Because the VC project is not expected to have any effect on threatened or endangered species, the project would not contribute to cumulative impacts to threatened and endangered species in the region.

Since no regulatory program protects uplands, the associated upland wildlife habitat (such as winter foraging areas) will continue to be developed in the future as the population in the area grows. This loss of upland habitat along with the conversion of farmland in northern Utah County would reduce the overall availability of wildlife habitat. The VC project would require about 122 acres for the new road, most of which provides limited wildlife habitat next to existing developed areas or is used as agricultural or pasture land. Other habitat impacts include the removal of less than 2 acres of wetlands. The affected wildlife habitat for the VC project would be less than 1% of what could be lost to anticipated development. With the continued development along the Wasatch Front, much of the existing wildlife habitat on the valley floors would be lost.

### **4.3 Public and Agency Involvement**

UDOT proactively shared project information with and sought comments from the public, resource agencies, and municipalities throughout the study process. This section summarizes the public and agency involvement activities that UDOT sponsored during scoping and development of the project concept and alternatives. This section also describes the communication tools used to support public involvement efforts.



### **4.3.1 Scoping**

A critical part of any transportation study is gathering comments in order to identify issues and potential alternatives early in the study process. The project team sought comments during a formal scoping period through e-mail, regular mail and a phone comment line and at an open house–style meeting. Scoping activities targeted the general public living in the area, business owners, and state, local, and federal government representatives. The advertised scoping period ran from January 15, 2008, through March 5, 2008, but comments received before or after this period were still considered as project development continued.

#### **4.3.1.1 Public Scoping**

The public scoping process allowed UDOT to gather information about concerns that local residents might have about the project and information that it would need to consider when developing the project concept and alternatives. UDOT asked the public to comment by e-mail, by mail, on the comment line, and at an open house on February 13, 2008. UDOT advertised the scoping meeting using newspaper advertisements, letters to local addresses, e-mails to a project e-mail list, signs and posters, and Web sites.

Open-house attendees reviewed maps of the evaluation area and learned why the project was proposed. About 60 people attended the open house even though the meeting coincided with a severe winter storm.

#### **4.3.1.2 Agency Scoping**

Although people who live in the evaluation area understand the issues associated with day-to-day life in the area, it is important to also coordinate with local, state, and federal agencies that oversee the management of land and resources in the evaluation area. UDOT sought input from agencies to help identify issues that should be analyzed in the environmental study and to determine if project construction would require any specific permits or approvals from these agencies. UDOT primarily sought agency comments through e-mail and regular mail, but several city representatives attended a scoping open house to learn more about and comment on the project. UDOT received 15 written comment letters from agencies during the scoping period. In addition to the open house, UDOT met with representatives of American Fork, Lehi, Lindon, Pleasant Grove, Orem, and Vineyard to introduce the project and ask for comments.



### **4.3.2 Development of Purpose and Need and Alternatives**

UDOT used information gathered during scoping and through technical analyses of existing and future travel in the evaluation area to formulate the project purpose and need and alternate ways to meet the project's purpose. Once UDOT developed an initial set of alignment alternatives, it invited the public to review and comment on the various options. The public provided input by e-mail and at an open house on June 25, 2008. UDOT considered information presented through the alternatives review as it continued developing the Action Alternative.

UDOT also worked closely with local governments as it developed the Action Alternative. The project team met several times with city representatives as it worked through details related to access, land uses around the alignment, and future traffic patterns.

UDOT will sponsor a final open house at the close of the project to present the study results and information about the Action Alternative. This final meeting will probably be held in December 2008.

### **4.3.3 Consultation and Coordination Tools**

UDOT used a number of methods and materials to distribute information about the project and to request comments. These included media releases, e-mail notifications, mailed notifications, small-group presentations, city council meetings and other city-sponsored events, public open houses, and portable document format (PDF) files on the project Web site. Most direct communication with the public apart from the open houses was electronically based, with the project Web site as the focus.

#### **4.3.3.1 Electronic Communication Tools**

In addition to the project Web site ([www.udot.utah.gov/vineyard](http://www.udot.utah.gov/vineyard)), other electronic communication tools were used to provide project information and receive comments. These included periodic e-mail updates sent to individuals who asked to receive project information, an online comment form as part of the project Web site, a project e-mail address ([vineyard@ppbh.com](mailto:vineyard@ppbh.com)), and a telephone comment line ([801] 753-7343).

#### **4.3.3.2 Media Relations**

UDOT used local media to help inform the public about the project and tell interested parties where they could get more information about the project. UDOT distributed informational materials to and held meetings with media outlets during scoping and alternatives development.

## **4.4 Permits and Clearances**

This section discusses the permits, reviews, clearances, and approvals that would be required to construct the Action Alternative. Even though the Vineyard Connector is not federally funded, several federal permits or clearances could be required.

### **4.4.1 Federal Permits and Clearances**

#### **4.4.1.1 Section 404, Clean Water Act, Individual Permit (USACE)**

Project proponents are required to obtain authorization under Clean Water Act Section 404 if a proposed action would result in the discharge of dredged or fill material in waters of the United States, including wetlands. In general, an individual Section 404 permit is required if the project would result in the fill of more than 0.5 acre of waters of the United States.

Construction of the Action Alternative would discharge more than 0.5 acre of fill material in waters of the United States. As described in Section 3.7.3, Waters of the United States, the agency responsible for issuing a Section 404 permit is USACE. Before a Section 404 permit can be granted, the applicant must first obtain a Section 401 water quality certification, which is a finding by the state water quality agency that the project complies with the State's water quality standards. Section 401 authorization is discussed in Section 4.4.1.2, Section 401, Clean Water Act, Water Quality Certification (Utah Division of Water Quality).

USACE would issue a Section 404 individual permit that would authorize UDOT to fill waters of the United States that are associated with the Action Alternative. The contractor would be responsible for implementing any special construction-related conditions of the permit. The contractor would also be responsible for any required changes or additions to the Section 404 permit due to design changes or construction activities.

When it issues a Section 404 permit, USACE must also ensure that its action of issuing the permit (that is, its authorization of the discharge of fill material to a regulated water body) would not result in violations of other federal laws. These other laws and regulations might require the issuance of other permits or clearances. Examples include an incidental take permit under Section 7 of the Endangered Species Act and clearance under Section 106 of the National Historic Preservation Act.

#### **4.4.1.2 Section 401, Clean Water Act, Water Quality Certification (Utah Division of Water Quality)**

Section 401 of the Clean Water Act requires federal agencies to ensure that their proposed actions do not violate state water quality standards. The federal government has delegated Section 401 certification to the Utah Division of Water Quality. UDOT would coordinate directly with the Division of Water Quality to obtain Section 401 certification for the project. The construction contractor would be responsible for implementing any special conditions of the certification. If the Section 404 permit needs to be amended because of design changes, the contractor would also be responsible for coordinating with the Division of Water Quality to ensure that the certification remains valid for the life of the project.

#### **4.4.1.3 Section 402, Clean Water Act, Utah Pollution Discharge Elimination System Permit (Utah Division of Water Quality)**

Section 402 of the Clean Water Act regulates discharges of pollutants to surface waters. Construction projects that disturb more than 1 acre of land must be covered under the statewide UPDES stormwater permit. The Action Alternative would disturb more than 1 acre of land and would require coverage under the UPDES stormwater permit. Utah's UPDES stormwater permit regulations were most recently updated in December 2004. To obtain a UPDES permit, a notice of intent must be submitted to the Utah Division of Water Quality describing the construction activities. A Storm Water Pollution Prevention Plan that includes a Temporary Erosion and Sediment Control Plan must be developed prior to submitting the notice of intent for the UPDES permit. The Temporary Erosion and Sediment Control Plan identifies best management practices as well as site-specific measures to minimize erosion and prevent eroded sediment from leaving the construction zone.

#### **4.4.1.4 Blanket Certificate (Federal Energy Regulatory Commission)**

If a transportation project changes the connections of major natural gas lines, the Federal Energy Regulatory Commission must be notified of and approve the change. Under a blanket certificate issued under Section 7(c) of the Natural Gas Act, a natural gas company can perform certain routine activities without obtaining a case-specific certificate for each individual project. The blanket certificate program provides an efficient way for a company to construct, modify, acquire, operate, and abandon a limited set of natural gas facilities and offer a limited set of services, provided that each activity complies with constraints on costs and environmental impacts set forth in the Commission's regulations.

The Action Alternative could affect up to 12,248 linear feet of natural gas pipelines. If modifications to the pipeline are required, UDOT might need to supply the owner of the affected pipeline(s) with documentation to support use of the blanket certificate.

## **4.4.2 State Permits and Clearances**

### **4.4.2.1 Utah State Stream-Alteration Permit (Utah Division of Water Rights)**

The Utah Division of Water Rights requires project applicants to obtain a stream-alteration permit if a stream crossing would result in a major stream alteration or modification. Constructing any new drainage structures at a stream crossing would constitute a major stream alteration or modification. UDOT anticipates that a stream-alteration permit would be required for the Action Alternative crossing of the American Fork River. The construction contractor would be responsible for obtaining the stream alteration permit.

### **4.4.2.2 Air Quality Approval Order (Utah Division of Air Quality)**

An air quality approval order is required to build, own, or operate a facility that pollutes the air, such as the Action Alternative. To obtain an air quality approval order, a notice of intent must be submitted to the Utah Division of Air Quality describing the construction activities and emissions that would be associated with operating construction equipment. The permit applicant must include provisions for controlling dust and emission sources, and the permit might require other construction approvals depending on the source and location of aggregate, asphalt, combustion, and/or fuel storage facilities. This permit would be obtained by the contractor before construction.

### **4.4.2.3 Water Rights (Utah Division of Water Rights)**

Existing groundwater wells within the right-of-way inventoried by the Utah Division of Water Rights are referred to as *points of diversion*. If a point of diversion is changed as a result of constructing the Action Alternative (that is, if the well is relocated outside the right-of-way), the owner of the well must file an application to change the location of the well as recorded in the deed record. If UDOT purchases the water right associated with a well in the right-of-way, the deed record with the Division of Water Rights would have to be changed.

#### **4.4.2.4 Certificate of Registration (Utah Division of Wildlife Resources)**

A certificate of registration is required by the Utah Division of Wildlife Resources if a proposed action could affect raptor nests. Although UDOT does not anticipate that any raptor nests would be affected by construction of the Action Alternative, new nests could be established before construction, and a certificate of registration could be required.

### **4.4.3 Local Permits and Clearances**

#### **4.4.3.1 Floodplain Development Permit (Local Jurisdictions)**

Floodplain development permits would be required from local jurisdictions if construction is required within the FEMA 100-year floodplain boundary, including placement of highway fill and drainage structures at stream crossings.

The cities of American Fork, Lindon, and Orem and Utah County have adopted FEMA's National Flood Insurance Program. This program includes the preparation of flood insurance rate maps that depict the 100-year floodplain boundaries for regulated streams crossed by the roadway alignment. The Town of Vineyard does not participate in the National Flood Insurance Program.

The Action Alternative would cross two regulatory floodplains, one at the American Fork River in American Fork and one at Grove Creek (also known as Hollow Ditch) in Lindon. Installation of culverts would directly affect the 100-year floodplains of these two FEMA-regulated areas. In accordance with Executive Order 11988, Floodplain Management, UDOT would need to coordinate with FEMA during the construction phase to ensure that the flood design standards are met and to obtain the Floodplain Development Permit from the local communities.

#### **4.4.3.2 Construction-Related Permits and Clearances (Various Agencies)**

The contractor would be responsible for obtaining all construction-related permits and other environmental clearances for activities occurring outside the right-of-way, such as construction staging areas, borrow areas, and batch plant sites.

## **4.5 Short-Term Uses versus Long-Term Productivity**

The short-term use of the environment versus preserving its long-term productivity relates to converting the natural productivity of the land, viewed as a renewable use, to a developed use that has a relatively short economic life. The long-term, natural productivity of the VC evaluation area comes from some agricultural land within the right-of-way along with the wildlife productivity, vegetation habitat, and wetlands.

These resources and uses would be replaced by the use of the land for the new road. The new use would be consistent with the Utah Legislature's intent to address a locally critical highway need and with the RTP (MAG 2007), which considers the need for present and future traffic capacity that is consistent with present and future land-use planning.

## **4.6 Irreversible and Irretrievable Commitments of Resources**

Implementing the Action Alternative would involve a commitment of a range of natural, physical, human, and fiscal resources. Use of the land for constructing the VC is considered an irreversible commitment of these resources during the time that the land is used for the project. However, if a greater need for use of the land arises, or if the road is no longer needed, the land could be converted to another use. At present, there is no reason to believe such a conversion would be necessary or desirable.

A considerable amount of fossil fuels, labor, and roadway construction materials such as cement, aggregate, and bituminous material would be expended. Additionally, large amounts of labor and natural resources would be necessary for fabricating and preparing the construction materials. These materials are generally not retrievable, but they are not in short supply and their use would not have an adverse effect on the continued availability of these resources.

Constructing the VC project would also require a substantial expenditure of irretrievable funds. The commitment of these resources is based on the premise that residents in the area, the state, and the region would benefit from the improved quality of the transportation system. These benefits would consist of improved accessibility and savings in travel time, all of which are anticipated to outweigh the commitment of these resources.

Constructing the VC project would convert wetlands and agricultural land to a transportation use. These losses would be considered an irreversible commitment of resources.

## 4.7 References

[CEQ] Council on Environmental Quality

- 1997 Considering Cumulative Effects under the National Environmental Policy Act.

[FHWA] Federal Highway Administration

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- 2008b I-15 Corridor Utah County to Salt Lake County Final EIS. August.

[HDR] HDR Engineering, Inc.

- 2007a Notes from a meeting with City of Orem staff. December 19.
- 2007b Notes from a meeting with Town of Vineyard staff. December 20.
- 2008a Notes from a meeting with American Fork City staff. January 22.
- 2008b Notes from a meeting with Lindon City staff. May 8.
- 2008c Notes from a meeting with area landowners. April 15.
- 2008d Notes from a meeting with Lehi City staff.

[J-U-B] J-U-B Engineers

- 2007 Town of Vineyard Land-Use Plan. Prepared for Town of Vineyard. February 28.

Jones & Stokes

- 2005 Legacy Parkway Wildlife Impacts Technical Memorandum. November.

[MAG] Mountainland Association of Governments

- 2007 2030 Regional Transportation Plan.
- 2008 Municipal population projections. April.

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- 2008 Letter to State Senator John Valentine regarding the proposed Vineyard Connector route. October 22.

Utah Division of Water Resources

- 2003 A Water-Related Land Use Summary Report of the State of Utah.



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